



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D350-604-041
Job Sheet 155147



50

Part No: D350-604-041

Job Qty: 1 ea

Part Name: Rear Locker Extender



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 9/30/17

Job Tracking No:

Due Date: 11/1/17

Created By: Mario Poulin

Type: Stock

Description:

Customer: Rilpa Enterprises Ltd (CRILP01)

480 Aviation Way NE Calgary, AB, T2E 7G3 Canada ph:(403) 275-3035 fx:(403) 730-0170.

Note: DWG D350-604-041 REV C U/R, D2273 REV M IPP Rev:Q 03.12.01 Reformat KJ/RF IPP REV:R 12.02.07 AS PER ECN12-521 DD verf:JLM IPP REV:S 12.04.04 AS PER DWG REV.B DD VERF:EC IPP REV:T 13.09.12 as per CHG006/ECN13-616 DDVERF:JLM IPP REV:U 14.05.28 as per chg008/ecn14-563 DD verf:JLM IPP REV:V 15.03.13 remove cam lock and washerDD verf:JLM IPP REV:W 15.03.25 ECN15-545 DD VERF:JLM IPP REV:X 17.01.12 AS PER CHG010 DD VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Due Date	Standard		Workcenter/Supplier	
				Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time
90	Start up Operation	1 Ea	10/31/17	0.00	0.00	Start up container	SPA-127
100	DC	1 pcs	10/31/17	0.00	0.00	DC	SPA-121
110	Purchasing	1 pcs	10/31/17	0.00	0.00	Purchasing	SPA-121
120	Packaging	1 pcs	10/31/17	0.00	0.00	Packaging2	SPA-121
130	QC	1 pcs	10/31/17	0.00	0.00	QC6	SPA-121
140	Small Fab	1 pcs	11/1/17	0.00	1.61	Small Fab	SPA-121
150	QC	1 pcs	11/1/17	0.00	0.00	QC5	SPA-121
155	Packaging	1 pcs	11/1/17	0.00	0.00	Packaging1	SPA-121
158	QC	1 pcs	11/1/17	0.00	0.00	QC4	SPA-121
160	Packaging	1 pcs	11/1/17	0.00	0.00	Packaging3	SPA-121
170	QC21-FG	1 Ea	11/1/17	0.00	0.00	QC21	SPA-121

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	D350-604-041P	1	0	0	0
140-Small Fab	D2268	1	7	0	0
	D2728-1	1	0	0	0
155-Packaging	D2269	1	1	0	0
	D5062-041	1	4	0	0

Part Specifications

Specifications could not be found.

DART
AEROSPACE
S016342

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com



Rear Locker Extender

PART NO: D350 - 604 - 041
Revision:
Operation: Purchasing
Change No:

Mfg Date: 12/01/17 Job No: 155147
--

Work Order ID 155147***155147***

Page 1

Monday, January 09, 2017 11:30:48 AM

Item ID: D350-604-041
Revision ID: URF 16-567
Item Name: Rear Locker Extender

Accept

N900040100

Setup Start ***NS1***
Stop ***NS2***

Start Date: 9/29/2017 Start Qty: 1.00 ***1***
Required Date: 11/1/2017 Req'd Qty: 1.00 ***1***

Cust Item ID:
Customer:

Reference:

Approvals: Process Plan: DAS 21 9-89 Date: JAN 12 2017 Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D2273	<u>10/R M 17/01/12</u>
D350-604-041	<u>CUR 9/17/13</u>

100	Document Control	0.00
100	DOCUMENT CONTROL	

DC
Doc.Control -USB or Paperwork

Memo
Photocopy bluefile and create labels per PPP D350-604-041
CHG009 DAS 21 9-89 see attachment

110	PURCHASING	0.00
110		

Purchasing
Purchasing

Memo
Issue P/O: 34975
Description: D350-604-041 Rear locker extender.
Manufacture as per dwg D2273
Supplier: FDC Composites Inc.
Certification of Conformity and process sheet required.

***EXTREME CARE MUST BE TAKEN TO PROTECT THE SURFACES OF
THE REAR LOCKER. THE SURFACES MUST BE SMOOTH AND FREE
FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR
DENTS.***

MUST BE WELL PACKAGE, IF NOT IT WILL BE REFUSE

1 JAN 17 2017 DAS 13 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐				
Date :	Step #:	QTY Effective :			MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			Completed By	
					Lead hand / Supervisor Approval Verification	
					QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY				
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
OTHER :						

Work Order ID 155147***155147***

Page 2

Monday, January 09, 2017 11:30:48 AM

Item ID: D350-604-041

Accept

N900040100

Setup Start

NS1

Revision ID: URF 16-567

Stop

NS2

Item Name: Rear Locker Extender

Start Date: 9/29/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 11/1/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

Receive & Inspect for Damage & Mat'l Certs
Packaging

0.00

120

Packaging

Memo

0.00

Packaging

Ensure a copy of Certification of Conformity and process sheet from Carbon-by-
Design is attached.

DO NOT STACK REAR LOCKERS OR ANYTHING ON THEM

130

QC6- Inspect dimensions to drawing

0.00

130

QC

Memo

0.00

Quality Control

Check hole locations to template. DT 8824 Check process sheet and audit.

140

0.00

140

Small Fab

Memo

0.05

Small Fab

1- INSTALL DECALS AS PER DWG

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			Completed By
					Lead hand / Supervisor Approval Verification
					QC / QA Coordinator Approval
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____	

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Setup	Start	*NS1*
	Stop	*NS2*

Cust Item ID:
Customer:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run	Start	*NR1*
	Stop	*NR2*

[illegible]

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : _____			

Picklist Print

Monday, January 09, 2017 11:30:51 AM

Work Order ID: 155147

155147

Parent Item: D350-604-041

D350-604-041

Parent Item Name: Rear Locker Extender

Start Date: 9/29/2017

Required Date: 11/1/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:Q03.12.01ReformatKJ/RF IPP REV:R
 12.02.07 AS PER ECN12-521 DD verf:JLM IPP REV:S 12.04.04
 AS PER DWG REV.B DD VERF:EC IPP REV:T 13.09.12 as per
 CHG006/ECN13-616 DDVERF:JLM IPP REV:U 14.05.28 as per
 chg008/ecn14-563 DD verf:JLM IPP REV:V 15.03.13 remove cam lock and
 washerDD verf:JLM IPP REV:W 15.03.25 ECN15-545 DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D350-604-041P		Purchased	No			110	Each	0.0000	1	1			
D350-604-041P									**				
Rear Locker Extender													
D2268		Manufactured	No			140	Each	13.0000	1	1			
D2268									**				
Placard													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST006		13							
				147069		7		6/13/2017					
				148553		6		7/22/2017					
D2728-1		Manufactured	Yes			140	Each	-1.0000	1	1			
D2728-1									**				
Dart Logo Label Small													
D2269		Manufactured	No			155	Each	8.0000	1	1			
D2269									**				
Placard													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST006		8							
				147070		2		6/13/2017					
				148588		6		7/22/2017					

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			Completed By
					Lead hand / Supervisor Approval Verification
					QC / QA Coordinator Approval
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____	

Picklist Print

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Page 2

Work Order ID: 155147

155147

Parent Item: D350-604-041

D350-604-041

Parent Item Name: Rear Locker Extender

Start Date: 9/29/2017

Required Date: 11/1/2017

Start Qty: 1.00

Required Qty: 1.00

D5062-041

Manufactured No

155

Each

16.0000

1

1

D5062-041

Bracket Assembly

Location

Loc Qty

Loc Code

ST147

16

145920

16

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By	
Root Cause				FAULT CATEGORY					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

TABLE 1

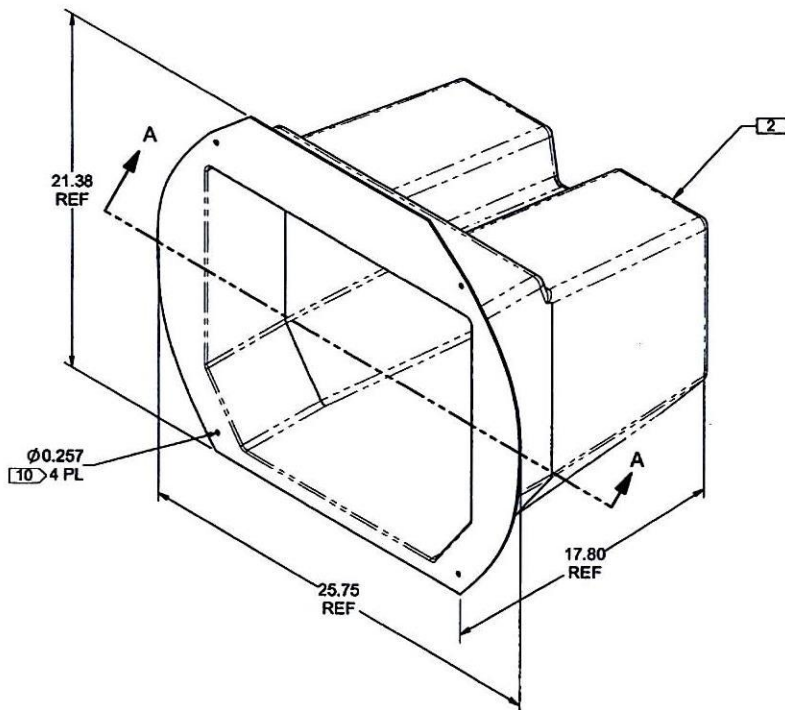
POSITION	MATERIALS
1	TOOL SURFACE
2	GELCOAT
3	3/4 oz CHOPPED STRAND MAT
4	7725 FIBER GLASS
5	7725 FIBER GLASS
9	7725 FIBER GLASS
10	PRIMER

TABLE 2

POSITION	MATERIALS
1	TOOL SURFACE
2	GELCOAT
3	3/4 oz CHOPPED STRAND MAT
4	7725 FIBER GLASS
5	7725 FIBER GLASS
6	7725 FIBER GLASS
7	7725 FIBER GLASS
8	7725 FIBER GLASS
9	7725 FIBER GLASS
10	PRIMER

NOTES:

- 1) MATERIAL: SEE TABLE 3
- 2) FINISH: SEE TABLES 1, 2, & 3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 5.5- 7.5 lbs
- 8) LAMINATE PER DART QSI 006. LAMINATION SCHEDULE PER THIS DRAWING
- 9) LAYUP USING DT9871 MOLD. WET LAYUP WITH BAG/VACUUM
- 10) TRIM & DRILL PER DT9905. OPEN HOLES TO Ø0.257
- 11) CONSTRUCTION: SEE TABLES 1 & 2
- 12) MATTE TO HOLD DOWN CORNERS AS REQUIRED



D2273 REAR LOCKER EXTENDER

TABLE 3

MATERIAL USED	DESCRIPTION
GELCOAT	55X3535 WHITE GELCOAT
FIBER GLASS MAT	OWENS CORNING 3/4 oz CHOPPED STRAND MAT
FIBER GLASS CLOTH	HEXCEL 7725 FIBER GLASS
RESIN SYSTEM	DION 7704
PRIMER	TEMPO 4500-PB-23G (GREEN)

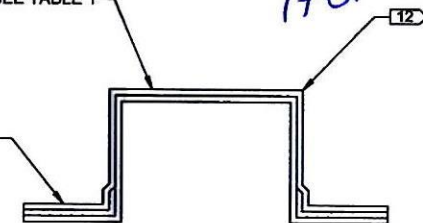
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER

NO. 155147 MJS
1701-12

SEE TABLE 1

SEE TABLE 2



SECTION A-A

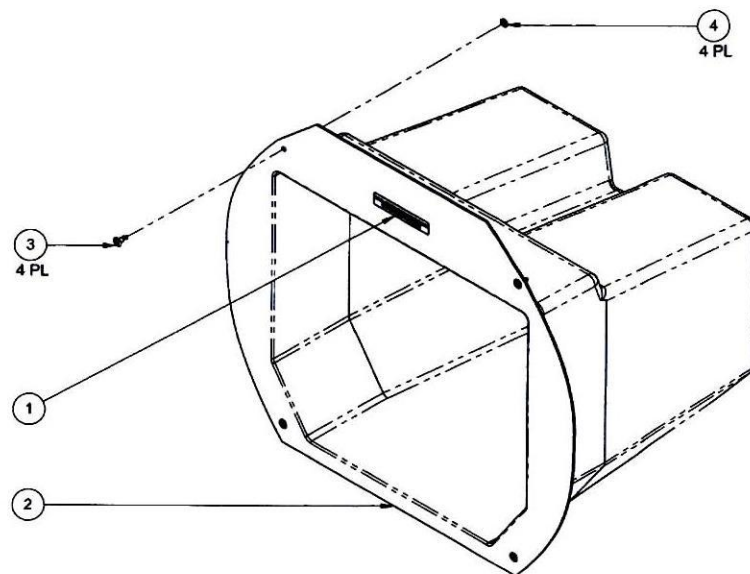
M	CHANGE GELCOAT TO 55X3535 WHITE GELCOAT, REMOVE PAINT FINISH OPTION (NOTE 2)	DB	16.05.19
L	ADD PAINT OPTION (NCR 15-5408)	CP	15.10.19
K	LAYUP AND MATL PER FDC COMPOSITES PROCESS	CP	15.03.12
J	CHANGED GELCOAT TO 4314-001 DURA FR WHITE	ML	13.12.10
I	CHANGE GELCOAT TO POLYCOR 2330PAWK745	SFM	13.08.13
H	CHANGE MATERIAL & MANUFACTURING PROCESS	DC	13.03.15
G	ADD MANUFACTURING OPTION B, ZN B5-1	DC	12.08.08
F	PRIMER LE 3404-S/LE 1175-S WAS 1144-S, ZN A5-1	DC	12.02.27
E	CHANGED SURFACE FINISH FROM 944W005 GELCOAT TO 2330PAWK745 GELCOAT, ZN A7-1. UPDATED DWG TO CURRENT STANDARDS.	DC	12.02.02
D	REMOVE EPOCAST, ADD SURFACE FINISH	CP	02.04.01
C	CLARIFY MATERIAL, LAYUP, AND TOOLING	RF	02.01.30
B	RE-DRAWN	MM	96.05.27
REV.	DESCRIPTION	BY	DATE

DESIGN	JB	DART AEROSPACE LTD	
DRAWN	DB	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ML	DRAWING NO.	REV. M
MFG. APPR.	DD	D2273	SHEET 1 OF 1
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	350 REAR LOCKER EXTENDER	NTS
DATE	16.05.19	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

RELEASED
2017-01-11
EAW 17-501

APPROVED

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
	X	D350-604-041	REAR LOCKER EXTENDER ASSEMBLY
1	1	D2268	PLACARD
2	1	D2273	REAR LOCKER EXTENDER
3	4	2600-6	CAMLOCK STUD
4	4	2600-LW	RETAINING WASHER



D350-604-041 REAR LOCKER EXTENDER ASSEMBLY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 5.5 to 7.5 lbs
- 8) INSTALL D2268 PLACARD IN LOCATION SHOWN, CENTERED ON FLANGE

C	REMOVE D2728-1, D2729-1 DECALS (ZN C5-1) REVISED RELATED NOTES, UPDATED PART WEIGHT	ML	13.12.16
B	INCORPORATE DSI 9470 (ZN D7-1), UPDATE DWG TO CURRENT STANDARDS. ADD D2728-1 PLACARD AND ORIENTATION NOTE (ZN C3-1), ADD D2729-1 (ZN C5-1).	DC	12.02.07
A	NEW ISSUE	CP	02.04.01
REV.	DESCRIPTION	BY	DATE
DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ML		
CHECKED	AP	DRAWING NO.	REV. C
MFG. APPR.	JLM	D350-604-041	SHEET 1 OF 1
APPROVED	MP	TITLE	SCALE
DE APPR.	DS	RLE ASSY	NTS
DATE	14.01.02	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

Change Record

PAGE 1 OF 1

Part Number: D350-604-041

Description: REAR LOCKER EXTENDER

[illegible]



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO34975

Supplier: FDC001-VC
FDC Composites Inc.
45 chemin de L'Aéroport , Local 26
St-Jean-sur-Richelie
QC
J3B 7B5 Canada
Phone: 450-357-1344 ext303
Fax: 450-357-1194

PO No: PO34975
PO Date: 1/17/17
Due Date: 11/1/17
**Purchase Order
Revision:**
Revision Date:
Ship-To Contact: Phone:

Pymt Terms: net 30

Freight Terms:

Special Comments:

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Items

Line Item	Part	Rev	Description	Item Tax	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	D350-604-041P	-	Rear Locker Extender		Firmed	11/1/17	1 Ea	0 Ea	1 Ea	\$705.00/Ea	\$705.00
2	D350-604-041P	-	Rear Locker Extender		Firmed	11/1/17	1 Ea	0 Ea	1 Ea	\$705.00/Ea	\$705.00
3	D350-604-041P	-	Rear Locker Extender		Firmed	11/1/17	1 Ea	0 Ea	1 Ea	\$705.00/Ea	\$705.00
4	D350-604-041P	-	Rear Locker Extender		Firmed	11/1/17	1 Ea	0 Ea	1 Ea	\$705.00/Ea	\$705.00
5	D350-604-041P	-	Rear Locker Extender		Firmed	11/1/17	1 Ea	0 Ea	1 Ea	\$705.00/Ea	\$705.00
										Grand Total:	\$3,525.00

Order Notes

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 10/6/17 1:11 PM Dart.Baker.Diane

FDC Composites inc.
45, Chemin de L'Aéroport
Local 26
Saint-Jean-sur-Richelieu (QC)
J3B 7B5
Tel. : 450 357-1344

Shipping Order

15/11/2017

Order : 2700
Reference : PO 34975/1-5

Customer: DAE-CAD

Dart Aerospace
1270 Aberdeen Street
Hawksbury, ON
K6A 1K7

Ship To

Same

Tel.: 1 613 632-9577

Item No.	Description	Qty	Qty. Delivere	B/O Qty
D350-604-041P	REAR LOCKER EXTENDER PO item: 34975/1 Lot: 2017-02-28 FDC ID: DAE001-121 B155143	1	_____	_____
D350-604-041P	REAR LOCKER EXTENDER PO item: 34975/2 Lot: 2017-03-01 FDC ID: DAE001-122 B155144	1	_____	_____
D350-604-041P	REAR LOCKER EXTENDER PO item: 34975/3 Lot: 2017-03-01 FDC ID: DAE001-123 B155145	1	_____	_____
D350-604-041P	REAR LOCKER EXTENDER PO item: 34975/4 Lot: 2017-03-02 FDC ID: DAE001-125 B155146	1	_____	_____
D350-604-041P	✓ REAR LOCKER EXTENDER PO item: 34975/5 Lot: 2017-03-02 FDC ID: DAE001-127 B155147	①	_____	_____

SPA 11-30

Shipping : _____
Package No : _____
Merchandise Received: _____

Ref. : _____



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CERTIFICATE of CONFORMITY

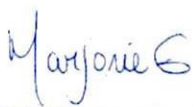
Customer Name: Dart Aerospace.

Customer P/O Number: 34975

Revision: NC

<u>PO Item</u>	<u>Qty</u>	<u>Part number</u>	<u>Dwg number</u>	<u>Description</u>	<u>Dart ID</u>	<u>FDC ID</u>	<u>Lot</u>
1	1	D350-604-041P	D2273 Rev M	350 Rear Locker Extender	B155143	DAE001-121	2017-02-28
2	1	D350-604-041P	D2273 Rev M	350 Rear Locker Extender	B155144	DAE001-122	2017-03-01
3	1	D350-604-041P	D2273 Rev M	350 Rear Locker Extender	B155145	DAE001-123	2017-03-01
4	1	D350-604-041P	D2273 Rev M	350 Rear Locker Extender	B155146	DAE001-125	2017-03-02
5	1	D350-604-041P	D2273 Rev M	350 Rear Locker Extender	B155147	DAE001-127	2017-03-02

I hereby certify that the workmanship, material and the processes used in the manufacture of the above part(s) supplied are in accordance with the requirements of the applicable Purchase Order.

Signature: 
Marjorie Geoffrion, Quality Inspector

Date: 2017-11-15



Gamme de Fabrication

# LOT	2017-02-02
# SÉRIE(ID)	DAE001-127

Nom de Gamme :	Rear locker extender – DART
# de Gamme (et rev.) :	DAE001 Rev. E
Nom pièce – Client :	350 Rear locker extender – DART AEROSPACE
# de Dessins (et rev.) :	D2273 Rev. M

ID: B155147 #5

Fiche suiveuse

PLACE (ÉTAPE)	DÉPARTEMENT	DESCRIPTION GÉNÉRALE	DATE SORTIE
[10-50]	PRÉPARATION	Moule, Espace de travail, Matières premières, Consommables	#21 8 FEB 2017 #23 28 FEB 2017
[60-80]	FINITION	Appliquer Gelcoat, Inspecter	#3 02 MAR 2017
[90-140]	MOULAGE	Laminer, Démouler, Inspecter	#26 02 MAR 2017
[150-190]	USINAGE	Percer, Découper, Ébavurer, Inspecter, Sabler	#30 9 MAR 2017
[200-230]	FINITION	Primer, Inspection	#3 28 MAR 2017
240	EXPÉDITION	Emballer, Expédier	#8 31 OCT 2017

Gamme préparée par :	Guillaume G.Jasmin
Gamme vérifiée par :	Francis Lavigne-Larente
Gamme approuvée par :	Maxime Gagné
Date d'émission :	2015-01-14

Gamme révisé préparée par :	Pascal Séguin
Gamme révisé vérifiée par :	Karim Malihi
Gamme révisé approuvée par :	Michel Morin
Date de révision :	2017-02-22

Informations à remplir :
Cases grises pâles

Inspection :
Cases grises foncées

Approbation Qualité

Approbation Qualité
Avant de produire le CofC, toutes les étapes et les informations requises des gammes subséquentes reliées à ce produit ont été complétées et remplies

Inspecteur

Qualité

Matières premières

Matériau (ou le nom du produit)	N° de lot	Date d'expiration	Spécification ou l'identification
Résine	102 8612	2017-05-17	Dion 7704
Norox (Résine)	41049	2017-08-01	MEKP-9
Norox (Gelcoat)	41049	2017-08-01	MEKP-9
Gelcoat blanc	702 284	2017-03-22	55X-3535
Mat ¾ oz/pi²	150511001741	N/A	¾ oz Chopped Strand Mat (Owens Corning Or Equivalent)
Fibre de verre 7725	4294874	N/A	Hexcel 7725 Fiber Glass
Apprêt (Primer) (Vert)	18 584	2018-12-31	Tempo 4500-PB-23G (Vert)
Durcisseur pour apprêt (hardener)	18 317	2018-05-01	Tempo 4500-C-23
Attache mécanique (Camloc)	508990	N/A	2600-5
Rondelle de retenue pour Camloc	1745658	N/A	2600-LW

Équipement	Matériau auxiliaire	Santé et sécurité
Moule : MOU306 ou MOU309	FMS	Sarrau
Pompe à vide	55NC	Lunettes de sécurité
Jig de découpe et perçage CNC 5 axes	Peel ply	Soulier de protection
Jig de finition et d'inspection : GAB355	Film perforé	Gants
	Bleeder breather	Masques à cartouches
Pince pour installer Camloc : OUT951	Bag big blue	
Outil pour installer rondelle de retenue : OUT952	Ruban scellant (Dum Dum)	

Annexe 1
Formulaire de résine (RES-DAE001)

N°	Description
MPS-300-93-31-007-NC	Démoulage 55NC
MPS-300-93-31-058-A	Composite part inspection
MPS-300-93-31-020-B	Edge finish after trimming
MPS-300-93-31-097-NC	Epoxy - Polyamide primer
MPS-300-93-31-084-NC	Protection et entreposage des pièces

Suivi des révisions

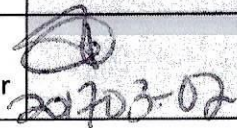
	Description	Date de révision	Révisé par :
A	Révision d'une OP inspection, Ajout nouveaux moules et retrait d'un type de primer	2015-03-04	Guillaume G.Jasmin
B	Ajout des conformateurs, du gabarit GAB355, de l'installation des camlocs, inspection du poids et identification finale	2015-03-25	Guillaume G.Jasmin
C	Mise à jour de la case approbation qualité page 1	2015-04-02	Guillaume G.Jasmin
E	Changement de gelcoat, modification du format de la gamme, révision complète de la gamme	2017-02-22	Pascal Séguin

PRÉPARATION

				Temps révisé minutes
10	<u>Remplir les informations requises sur la première page (cases gris pâle)</u> - Demander au coordonnateur de production (ID) - Inscrire les heures et les dates d'entrée et de sortie de département		#21 28 FEB. 2017 #23 28 FEB. 2017	E : R :
20	<u>Découper la fibre et les périssables (Peel ply, sac étanche...) selon l'ANNEXE 1</u> - ACHEMINER et REMPLIR la section « Matière premières » pour : - Fibre de verre 7725 - Mat ¾ oz	Annexe 1	#21 28 FEB. 2017 #23 28 FEB. 2017	E : R :
30	<u>Préparer la résine selon RES-DAE001 (Gamme de formulation de résine)</u> ACHEMINER et REMPLIR la section « Matière premières » pour : - Résine - Norox	RES-DAE001	#28 02 MAR. 2017	E : R :
40	<u>Péparer le moule</u> - Cochez le moule utilisé : MOU306 ☐ / MOU309 ☐ ☒ Nettoyer et traiter le moule ☐ Poser le Masking tape <u>Si nécessaire, traiter le moule au 55NC</u> Faire le test de pelage, s'il ne passe pas, appliquer une couche de 55NC et refaire le test.	Annexe 1 MOU306 ou MOU309 MPS-300-93-31-007	#19 02 MAR. 2017	E : R :

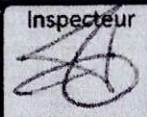
50	Préparer l'espace de travail (pendant l'application du gelcoat)			#21 2 MAR. 2017 #23 02 MAR. 2017	E : R :	
	☐ Vérifier et préparer la pompe ☒ Préparer et distribuer les outils ☒ Protéger l'environnement de travail (tables, plancher, etc.) ☒ Vêtir l'équipement de protection personnel ☒ Partir la ventilation ☒ Vérifier l'ordre et la présence de tous les plis de fibre et des morceaux de noyau dans le sac					
	Position	Matériel				Initial employé
	10F	¾ oz Chopped strand MAT				clausi NG
	20F	7725 Fibre de verre				clausi NG
	30F	7725 Fibre de verre				clausi NG
	40R	7725 Fibre de verre				clausi NG
	50R	7725 Fibre de verre				clausi NG
	60R	7725 Fibre de verre				clausi NG
	70F	7725 Fibre de verre				clausi NG

FINITION

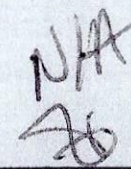
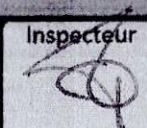
60	ACHEMINER et REMPLIR la section « Matière premières » pour : • Gelcoat blanc 55X-3535 • Norox MEKP-9		#28 02 MAR. 2017	E : R :		
70	Appliquer le Gelcoat (18 - 22 mils) <table border="1" style="width: 100%;"> <tr> <td>Heure d'application</td> <td>10 h 53 min</td> </tr> </table>	Heure d'application	10 h 53 min	Annexe 1	#3 02 MAR. 2017	E : R :
Heure d'application	10 h 53 min					
80	Vérification de l'épaisseur du gelcoat lorsqu'encore humide	Gauge d'épaisseur		E : R :		

MOULAGE

#	Description	Références	Date et Initiales	Temps estimé Temps réel																														
90	Points d'inspection (Inspecteur Qualité ou Chef d'Équipe) : ☒ Qualité de l'application du gelcoat : Uniforme et esthétique. ☒ Donner l'approbation pour que la pièce puisse être laminée (le gelcoat est « amoureux » ou « tack free »)		 2017-03-02																															
100	LAMINER <table border="1"> <thead> <tr> <th>Position</th> <th>Matériel</th> </tr> </thead> <tbody> <tr> <td>10F</td> <td>¾ oz Chopped strand MAT</td> </tr> <tr> <td>20F</td> <td>7725 Fibre de verre</td> </tr> <tr> <td>30F</td> <td>7725 Fibre de verre</td> </tr> <tr> <td>40R</td> <td>7725 Fibre de verre</td> </tr> <tr> <td>50R</td> <td>7725 Fibre de verre</td> </tr> <tr> <td>60R</td> <td>7725 Fibre de verre</td> </tr> <tr> <td>70F</td> <td>7725 Fibre de verre</td> </tr> </tbody> </table> CONSOMMABLE <table border="1"> <tbody> <tr> <td>10F</td> <td>Peel Ply</td> </tr> <tr> <td>20F</td> <td>Release film non perforé</td> </tr> <tr> <td>30F</td> <td>Bleeder / Breather</td> </tr> <tr> <td>50F</td> <td>Bagging bleu</td> </tr> </tbody> </table> ☐ S'assurer que tous les plis dans le tableau ont été laminés ☐ S'assurer que tous les conformateurs (Qte 9) sont en place par-dessus le Bleeder/Breather <table border="1"> <tbody> <tr> <td>Heure début laminage</td> <td>11 h 15 min</td> </tr> <tr> <td>Heure mise sous-vide (sac scellé)</td> <td>12 h 15 min</td> </tr> <tr> <td>Intensité du vide (25 inHg)</td> <td>29</td> </tr> </tbody> </table>	Position	Matériel	10F	¾ oz Chopped strand MAT	20F	7725 Fibre de verre	30F	7725 Fibre de verre	40R	7725 Fibre de verre	50R	7725 Fibre de verre	60R	7725 Fibre de verre	70F	7725 Fibre de verre	10F	Peel Ply	20F	Release film non perforé	30F	Bleeder / Breather	50F	Bagging bleu	Heure début laminage	11 h 15 min	Heure mise sous-vide (sac scellé)	12 h 15 min	Intensité du vide (25 inHg)	29	Annexe 1 GAB356 à GAB364 (Qte 9)	#26 02 MAR 2017 #23 02 MAR 2017 #21 02 MAR 2017 #19 02 MAR 2017	E : R :
Position	Matériel																																	
10F	¾ oz Chopped strand MAT																																	
20F	7725 Fibre de verre																																	
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Heure début laminage	11 h 15 min																																	
Heure mise sous-vide (sac scellé)	12 h 15 min																																	
Intensité du vide (25 inHg)	29																																	
110	LAISSER POLYMÉRISER la pièce sous vide pendant 2h	#19 02 MAR 2017	N/A 02 MAR 2017	#23 02 MAR 2017 E : R :																														
120	DÉMOULER et IDENTIFIER la pièce ☒ Brancher le système d'air comprimé ☒ Écrire le numéro de pièce et la date sur un collant – # de lot (date de début) – # de série ID Ex : (AAAAMMJJ) – (DAE001-XXX) ☒ Placer la pièce sur la table d'inspection	Annexe 1	#19 02 MAR 2017 #26 02 MAR 2017	E : R :																														

130	Point d'inspection (inspecteur qualité) : ☐ Identifier la présence de surplus de résine ☐ Identifier la présence de bulles d'air ☒ Identifier la présence de zone sèche ☒ Identifier la présence de plis dans la fibre	MPS-300-93-31-058	Inspecteur  Qualité	
140	<u>Nettoyer le moule</u> - Enlever la résine durcie tout le tour du moule avec une spatule en plastique pour ne pas endommager le moule <u>Si nécessaire</u>, nettoyer le moule avec un chiffon légèrement humecté de nettoyant à moule (PMC) NE PAS TROP APPLIQUER DE "PMC"	Spatule en plastique	#19 02 MAR. 2017 #26 02 MAR. 2017	E : R :

USINAGE

150	PERÇAGE ET DÉCOUPE CNC 5 axes : Utiliser le gabarit d'usinage et le programme d'usinage à l'emplacement suivant : Z:\PROGRAMMES\Dart Aerospace\Dart Aerospace Rear Lockers\21-Dessins & Outillage\Outillage\usinage 5 axes	Annexe 1	#30 9 MAR. 2017	E : R :
160	SABLAGE : - INSTALLER le Gabarit de finition et d'inspection GAB355 - SABLER la pièce jusqu'à arriver à la dimension du Gabarit GAB355 - ÉBAVURER les arêtes vives	GAB355 Annexe 1 MPS-300-93-31-020	N/A 	E : R :
170	Point d'inspection (inspecteur qualité) : ☒ Plier les flanges (rebords) afin de s'assurer que le Gelcoat ne craque pas (Voir Annexe 1 pour ce test) ☒ Vérifier la conformité de la pièce (Dimensions) selon le no. de dessin et selon le MPS-300-93-31-058	Annexe 1 MPS-300-93-31-058	Inspecteur  Qualité	
180	SABLER légèrement l'extérieur de la pièce Papier 120 à 320 grains		#19 13 MAR. 2017	E : R :
190	NETTOYER les surfaces extérieures		#3 MARS 28 AVR. 2017	E : R :

FINITION

	Description	Références	Date et Initiales	Temps estimé Temps réel
200	APPLIQUER le primer 2 couches d'environ 10 mils chacune	MPS-300-93-31-097	#3 MHRS 28 APR. 2017	E : R :
210	<u>Protéger le gelcoat</u> Découper une pellicule de plastique protecteur bleu et la coller sur le rebord et à l'intérieur de la partie blanche (Gelcoat) (Voir Annexe 1)	Annexe 1	#19 2 MAI 2017	E : R :
220	<u>INSTALLER les attaches mécaniques (Camlocs) (Qte 4)</u> - Utiliser les pinces spécialisées (OUT951) pour insérer les Camlocs dans les trous - Utiliser l'outil spécialisé (OUT952) pour installer les rondelles de retenues	Annexe 1 Pince à Camloc (OUT951)	#19 2 MAI 2017	E : R :
230	<u>Inspection finale :</u> - Validation de la finition (pinholes, surface inégale, etc...) - Vérifié s'il y a un panneau de contrôle relié à la pièce - Étamper le carré dans le coin inférieur droit de la première page - Poids de la pièce : <u>6.2</u> (LBS)	Annexe 1 MPS-300-93-31-058	Inspecteur EK 2017-07-20 Qualité	

EXPÉDITION

	Description	Références	Date et Initiales	Temps estimé Temps réel
240	Identifier, emballer et expédier Identification selon le document DART QSI044 à l'emplacement suivant : Z:\PROGRAMMES\Dart Aerospace\Dart Aerospace Rear Lockers\22-Gammes de Fabrication\In process	MPS-300-93-31-084	#8 31 OCT. 2017	E : R :